

# Islands of Hope



Goldman Prize for National Park Hoge Kempen

Conference: The European Union and its Overseas Entities

Sailing to Barcelona





# Editorial

## Contents

|  |    |
|--|----|
| On the front line: The EU's overseas islands battle climate change | 3  |
| Small islands cannot adapt <i>ad infinitum</i>                     | 6  |
| Reunion: Island biodiversity of international relevance            | 7  |
| Overseas biodiversity at the heart of global challenges            | 8  |
| Conserving New Caledonia's dry forests                             | 9  |
| Model ecosystem in Moorea  | 10 |
| Manage invasive alien species on islands                           | 11 |
| Sailing to Barcelona   | 12 |
| Prized National Park 'Hoge Kempen'                                 | 13 |
| News from IUCN Europe  | 14 |
| Events and Publications  | 16 |

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Prepare to get wet this summer: If there is one connecting theme in IUCN's activities at the moment, it is water. Islands – the main focus of this newsletter – are in the end simply precious ecosystems divided by water. The next 16 pages will tell you about some of the forthcoming challenges for island biodiversity, and about the best ways of conserving it.

The occasion for choosing this topic is the conference “The European Union and its Overseas Entities: Strategies to Counter Climate Change and Biodiversity Loss (7 - 11 July 2008)”. More than 350 islands from the poles to the tropics are part of overseas Europe. These regions are on the front line when it comes to the effects of climate change. They also boast some of the richest biodiversity in the world.

Protecting these riches is a special challenge for the European Union, and an opportunity to establish good practice nuclei in regions of the developing world, which can serve as examples to follow with possible assistance from European development cooperation.

Later this summer, a fleet of sailing boats will bring contributions on marine conservation to the IUCN World Conservation Congress in Barcelona (5–14 October). If you haven't signed up for this largest and most important conservation event, you should do so now at [www.iucn.org/congress!](http://www.iucn.org/congress!)

See you in Barcelona,

**Tamás Marghescu**  
IUCN Regional Director for Europe



Marine ecosystems are in danger © IUCN/Jim Thorsell

# On the front line: The EU's overseas islands battle climate change

By **Jeffrey McNeely**, IUCN's Chief Scientist and **Jérôme Petit**, author of the forthcoming publication "Europe's Outposts - Impacts of climate change on biodiversity in European overseas entities"

The European Union's satellite territories are scattered across three oceans and two continents. Its overseas entities cover a surface area roughly the same size as continental Europe, and are home to a wide diversity of nature. These territories serve as an indicator of climate change impacts in three crucial ecosystem types: islands, the polar regions and the Amazon rainforest.

The overseas entities belong to six member states of the EU: Denmark, France, the Netherlands, Portugal, Spain and the United Kingdom. The EU recognizes two different legal statuses: the seven outermost regions (e.g. the Azores, Guadeloupe, Reunion Island) are an integral part of the EU. In contrast, the 21 overseas countries and territories (e.g. Falklands, French Polynesia, Greenland) have a special status. While the inhabitants of these territories are citizens of the associated member state, EU regulations do not necessarily apply.

**New Caledonia has 2423 endemic species; mainland France only has 353.**

Overseas Europe has more than 350 tropical, temperate and polar islands and bases in the South American Amazon and Antarctica. Its biodiversity is often mind-boggling. Having developed in isolation from the continents, islands are the most productive playgrounds of evolution: New Caledonia alone has 2423 endemic species (that is, species found nowhere else); mainland France only has 353. The waters surrounding them are home to an exceptional collection of marine fauna and flora. French Polynesia has 20 percent of the world's atolls and 12800km<sup>2</sup> of coral reefs. The waters around the Canary Islands are home to 29 species of whales. Most overseas territories are situated in biodiversity hotspots, regions where biodiversity is both rich and extremely threatened. Such areas are the focus of international conservation attention but also of international tourism: names like Tahiti, Bermuda, and Curaçao have inspired the dreams of many holidaymakers.





Red-footed booby on Chagos, British Indian Ocean Territory  
© John Turner



Green turtle (*Chelonia mydas*)  
© Mila Zinkova

### Under pressure

The isolation of these islands makes them particularly vulnerable to external disturbances: It is estimated that 75 percent of all species extinctions in the last 400 years have taken place on islands, and about a quarter of all island species today are on IUCN's Red List of Threatened Species. The reasons for this decline range from habitat destruction and pollution to climate change.

However, invasive alien species remain the single largest cause of species loss on islands and severely affect local plant and animal populations. Rats, introduced when the islands were discovered by Polynesians in the Pacific and others elsewhere, prey on indigenous birds and their eggs on many islands. In Tahiti, the introduced ornamental Miconia tree (*Miconia calvescens*) has taken over two thirds of the island's surface in 70 years. In total, French Polynesia has 1700 non-native plant species.

Tourism is the most important economic activity for most of the tropical islands, and has in many places caused mangroves and wetlands to be replaced with tourist infrastructure. It also poses additional strains on natural resources and waste management in already densely populated areas. While the polar regions are practically uninhabited, tropical islands tend to have very high population densities. With a population density five times above the EU average, Mayotte's terrestrial ecosystems are highly degraded, and the primary forest has almost disappeared.

### Climate changes

In the coming years, climate change will exacerbate these pressures and lead to new challenges worldwide. Impacts of global warming can already be witnessed. Scattered across the planet, the EU's overseas entities could serve as laboratories for finding solutions that work in a regional context – be it in the tropics or the polar regions.

The Arctic ice shelf surrounding Greenland has lost more than one million km<sup>2</sup> in only two years.

Significant warming is expected to take place throughout the overseas entities, but with important variations: in the Caribbean, the Indian Ocean, the South Pacific and Macaronesia (the islands in the Atlantic off the coast of Africa), temperature increases are predicted to be slightly lower than the global average at around 2°C. The mountainous islands of volcanic origin in these areas are often divided into bio-climatic zones ranging from a hot and dry climate at sea level to a cool and humid climate at higher altitude.

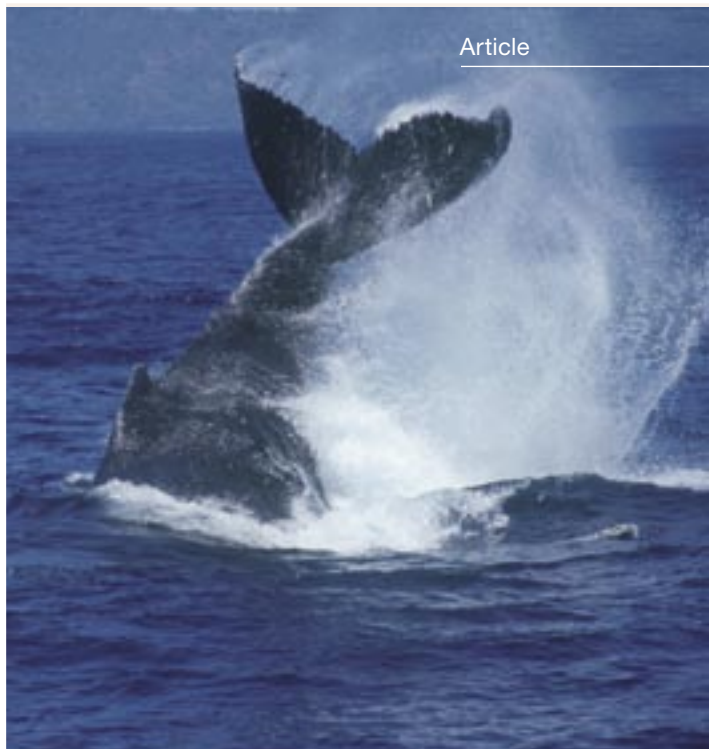
Increases in temperature will cause these zones to move upwards. This migration will pave the way for the spread of invasive species to the detriment of more fragile indigenous species. High-altitude rainforests as found on Reunion Island are the most vulnerable ecosystem as no higher land remains for upward migration.

Warmer oceans have numerous effects on water-borne species. In Macaronesia, migrations of southern tropical fish have recently been observed for the first time. Major movements of fish could modify the equilibrium of marine food chains. Warmer waters have already led to a significant decline in the amount of phytoplankton, single-celled algae at the bottom of the food chain that account for about half of global photosynthesis. This decline affects the availability of krill, the main food source for several large whales, in the southern polar region. Coral bleaching caused by climate change has fast become one of the greatest threats to coral reefs worldwide, and immediately threatens the fish species that depend on coral for their survival. Bleaching results from any disruption in the marine environment, but particularly from a noticeable warming of the seawater.

Temperature increases in the Arctic will be even more dramatic than elsewhere and reach double the global average. Even now, the Arctic ice shelf surrounding Greenland has lost more than one million km<sup>2</sup> in only two years, and might be approaching a tipping point where the loss becomes permanent. Glacial melt in the polar regions could destroy some of the barriers to the spread of invasive species into previously inaccessible habitats. Rats in South



Forest in Martinique © IUCN / Jean-Philippe Palasi

Humpback whale (*Megaptera novaeangliae*)  
© Valérie Collin-Omnes

Georgia are already beginning to affect the marine bird population. At the same time, thawing of the Arctic shelf will destroy the habitats of iconic species such as the polar bear.

#### Europe's rainforest

French Guyana is a slice of equatorial rainforest the size of Portugal in the north of Brazil, home to more than 5000 plant species and 700 different birds. As an outermost region it is fully part of the EU. Ninety percent of its coastline is covered in mangroves. Though still vast, the forest increasingly suffers from fragmentation by roads, illegal gold panning and poaching. Climate change may lead to longer and more severe droughts in the Amazon region, increasing the risks of forest fires. A large proportion of seed plants might become extinct if temperature and rainfall patterns in the Amazon change too much.

As ice shelves and glaciers melt and warmer oceans expand, the Intergovernmental Panel on Climate Change (IPCC) predicts a global rise in the sea level of at least 35cm (with significant regional variations and larger storm surges). This threatens beaches (egg-laying sites of marine turtles), and fragile mangrove forests and coral reefs. On average, every centimetre rise leads to the erosion and loss of one metre of beach. Over just the past ten years, 70 percent of beaches on nine Caribbean islands have been eroded.

The changing temperature will also change weather patterns. Most EU overseas entities may benefit from increases in precipitation. However, the Caribbean is likely to become drier, and suffer from an intensification of tropical storms in the North Atlantic. These storms are a serious threat to human infrastructure, but also to a variety of habitats including mangroves and coral reefs. They hinder the paths of migratory birds and destroy the refuges and food sources of terrestrial ones. Highly sensitive to climate and

meteorological conditions, birds throughout the world have started to shift their seasonal migration patterns and egg-laying periods. Stronger south-westerly winds from Africa could help the spread of wind-borne invasive species such as locusts to the Canary Islands. A reduction in rainfall will reduce agricultural yields and increase the likelihood of forest fires, threatening for example the remains of New Caledonia's dry forests.

#### A call to action

Islands need biodiversity to help adapt to climate change. Healthy ecosystems are more resilient to emerging threats, and provide protection for islands and their inhabitants. Nature in the EU's overseas entities already faces numerous pressures. Protecting it at the ecosystem level will be one of the most important adaptation measures to undertake. As these ecosystems change with the climate, traditional conservation measures like protected areas will need to be supplemented with improved connectivity between natural habitats (thereby allowing natural migration) and an active reduction of the underlying causes of biodiversity loss.

To become islands of hope, overseas entities can and need to do more than protect themselves from the coming challenges. On their own scale, they can show what a carbon-neutral society looks like, how renewable energy can power a good lifestyle, and how healthy ecosystems underpin a healthy economy. As part of the European Union, they can become role models for other countries and islands in their surroundings, and they can call upon the rest of the world to follow their example and drastically reduce carbon emissions.

To become islands of hope, overseas entities must do more than protect themselves from the coming challenges.



Rolph Payet at the Global Oceans Conference 2008  
© IISD

# Small islands cannot adapt *ad infinitum*

Interview with **Rolph Payet**, Special Advisor to the President of the Seychelles and Lead Author of the Intergovernmental Panel on Climate Change (IPCC) by **Olivia Pasini**

*The IPCC draws attention to climate change impacts facing islands, such as increased freshwater stress, rising sea levels, changing weather patterns and the spread of invasive alien species. How do you see small islands coping with these changes?*

Islands have to integrate sustainability, development and climate adaptation issues at the policy and institutional levels. Above all, measures to strengthen capacity and management across all sectors should be put in place. Adaptation to climate change is imperative and immediate for most small island states, and resources therefore need to be made available to enable them to cope with change. Mitigation, on the other hand, presents an opportunity for many small islands to reduce their dependency on fossil fuels, developing renewable energy platforms based on wind, the sun and the ocean. This significant window of opportunity should be supported by the international community.

*What are the most pressing climate change challenges for the Seychelles?*

Sea-level rise and extreme wave conditions have already caused severe coastal and beach degradation in many areas of the Seychelles. More intense wave energy now reaches the coastline as a result of the mass coral bleaching event in 1998. Coral reefs play an important role as active barriers to waves and changes in the sea level, hence when destroyed as a result of direct human action or climate change, they no longer protect the coast. Although the Seychelles receive more than 3000mm of rainfall per year, another challenge is freshwater availability because of inadequate storage. As it is predicted that the island will experience wetter conditions separated by intense dry periods, adaptation should ideally focus on increasing storage capacity whilst conserving water.

*Why is climate change such a big issue for islands?*

Climate change will affect islands in a dramatic way not only because of their physical location but more so because of their vulnerable human populations. Islanders have an opportunity to innovate and seek inventive ways to share solutions yet, in general, there is too little cooperation and exchange between Europe's



Seychelles © Rolph Payet

overseas entities and the Small Island Developing States (SIDS). It is for this reason that President Michel of the Seychelles launched the Sea Level Rise Foundation – a platform for all islands to work together, share best practice and build knowledge for the effective adaptation to climate change.

*What is the relevance of the forthcoming conference “The European Union and its Overseas Entities: Strategies to Counter Climate Change and Biodiversity Loss” to be held on Reunion Island in July?*

There have been many meetings recently on climate change; some productive, others merely talk-shows. This conference is unique and opportune as it will bring together, probably for the first time, European overseas entities and SIDS. It is therefore important we seize this chance to identify synergies and further collaboration, and to establish a network that will operate beyond the conference.

It is also vital that we identify common challenges and perhaps solutions, which can then be effectively used to influence EU policy on climate change and adaptation issues, in particular with respect to small islands. The EU has put in place a number of ambitious

targets to reduce emissions as well as a facility for adaptation; however it is critical that the EU takes into consideration the views of those most vulnerable to the effects of climate change.

*Can islands cope with climate change?*

I hold a very optimistic view of how islands will cope with climate change. Obviously this conclusion depends on the implementation of timely mitigation and adaptation measures. Small islands cannot adapt *ad infinitum*, and essentially we now have a window of opportunity which is increasingly becoming narrower and narrower. Large emitters have to put in place emissions reduction measures immediately to avoid the worst case scenarios – that is mass movements away from coastlines and low-lying areas. The displacement of millions of people is something we must, and can, avoid at all costs.



Reunion Island

# Island biodiversity of international relevance

By *Alain Brondeau*, Reunion Island National Park

Reunion Island © Alain Brondeau

Reunion Island is considered a very young island in geological terms. After having emerged from the south-western Indian Ocean some three million years ago, from a volcanic hotspot, the island, like Big Island in Hawaii, is still being formed. As a young Indian Ocean island, Reunion Island has two main characteristics:

- **Isolation from continents.** Combined with its small size, its isolation strongly limits the spontaneous arrival of new species, but favours their differentiation into new, so-called “endemic” species. Two hundred and thirty of the 900 indigenous vascular plant species are endemic to Reunion Island. At high altitude, the level of endemism can reach 90%.
- **Mountain ranges (the highest peak reaches above 3000m and there are many steep rock faces and impressive cliffs).** Combined with the effects of the south-eastern trade winds, this mountain range creates hundreds of very diverse and often extreme “topoclimates”. This diversification is reflected in the environment, where over 100 habitat types span the different altitudes, also varying according to their geographical direction and the level of colonization of the lava flows.

With the other islands of the south-western Indian Ocean, Reunion Island is one of the world’s 34 biodiversity hotspots. The Mascarene Islands (or Mascarenhas Archipelago) are an important and unique component of this hotspot because of the uniqueness of their formation and their levels of endemism.

Reunion Island’s geological, meteorological and ecological characteristics are behind the UNESCO World Heritage Site listing application for its “volcanic plugs, cirques or coombes (amphitheatre-like valleys) and cliffs”.

## Conservation threats

Although Reunion Island was colonized late (human settlements date back less than 350 years), deforestation due to agricultural expansion and urbanization has transformed two thirds of the island’s vegetation. The low-lying and coastal zones have been strongly affected and only subsist as relics. On the other hand, high-altitude habitats have been spared to a greater extent, protected by the mountains and by public land purchase policies since the 19th century. Many are still close to their original state and the global level of preservation of natural habitats in Reunion Island remains exceptional for a tropical island.

The main threat to biodiversity in Reunion Island today comes from human-induced biological invasions by animal and plant species that are often more competitive and numerous than indigenous species. Whilst the battle against invasive plants started years ago, that against invasive animals is more recent and poses financial and legal problems. Other direct and indirect threats to the island’s biodiversity are: fires; extensive uncontrolled grazing; poaching; and the fragmentation of certain habitat types or their rapid conversion for recreational uses.

Reunion’s National Park covers more than 40 percent of the island.

These different threats have led to the rapid extinction of most of the animal species that have disappeared since the beginning of colonization. Today, three bird and over 120 plant species are still threatened with extinction.

## Environment at the heart of the Reunion’s development

Created in March 2007, Reunion National Park strives to ensure the long-term preservation of the island’s terrestrial habitats. Its establishment reflects a conservation policy, in place since 1995, as illustrated by regional planning schemes, and implemented both by the State and local communities. Activities carried out by the Park include building up knowledge about and monitoring ecosystems; managing invasive species and restoring habitats; implementing endangered species conservation plans; furthering understanding of the island’s natural heritage amongst locals and visitors; and regulating the use of biodiversity whilst supporting sustainable development.

Choosing such a high level of protection for more than 100 000 hectares (42 percent of the island) does nonetheless pose major challenges for an island in full demographical expansion – the population has more than tripled over the past fifty years – and economic growth, where land rights and land-use policy often appear to be limiting factors.

Far from creating a conflict between conservation and development, Reunion Island is banking on the environment as the driving force behind the island’s development through the “GERRI” (Green Energy Revolution – Reunion Island) project. The island must therefore become an experimental space and showcase for clean energy and transportation, and is striving to be self-sufficient in energy by 2030. The environment and efforts towards sustainable development are thus bound to become factors attracting tourists and bringing the island’s society together.

Reunion Island, 07-11 July 2008



# The European Union and its Overseas Entities

## Strategies to counter Climate Change and Biodiversity Loss

By **Jean-Philippe Palasi**, IUCN Programme Coordinator for EU Overseas Entities

### Overseas biodiversity at the heart of global challenges

The environmental policies of the European Union are not developed in a vacuum. Instead, they are inherently linked with international policy processes, and often serve as an example for other countries. What better way for the European Union to strengthen this link than to work with its overseas entities?

A unique network covering the entire planet, these 28 entities range from Greenland to Polynesia, from Guyana to South Georgia, from the Azores to the Kerguelen Archipelago. European law distinguishes between the seven Outermost Regions (ORs), an integral part of the European Union, and the 21 associated Overseas Countries and Territories (OCTs).

The first environmental conference on the EU's overseas entities will take place from 7–11 July on Reunion Island in the Indian Ocean: "The European Union and its Overseas Entities: Strategies to Counter Climate Change and Biodiversity Loss". The objective is to bring together the European Union, the Member States and the different territories to develop a joint vision on climate change and biodiversity loss.

Overseas Europe contains an incredible diversity of species and ecosystems, far more than in the whole of continental Europe. The ORs and OCTs shelter natural jewels which are part of the heritage of humanity and which play a big role locally on the cultural, economic and social level. This wealth is under pressure from pollution, habitat loss and the rapid expansion of invasive alien species. In addition to these "traditional" dangers, climate change now imposes additional threats on these vulnerable territories.

Until today, the European Union has concentrated its environmental effort on continental Europe. Now it has to propose a strategy for the overseas entities that matches the size of the challenge, with financial means, concrete mechanisms in each territory, and a strengthening of regional cooperation. This is a duty for the European Union, but also a historic chance to lend a global scale to its environmental policies.

The fight against invasive species is one of the priorities. This problem is very serious and costly in the overseas entities, and will become worse with climate change. ORs and OCTs urgently need a coherent framework of action in this field, and the European Strategy on Invasive Alien Species (to be published in 2008) needs to provide for this.

### IUCN mobilizes for a European strategy

IUCN is working hard for the European recognition of all these challenges. The organization is preparing a scientific synthesis of climate change impacts on the biodiversity of overseas entities. In addition, it is coordinating the organization of the Reunion conference, together with the French government, the *Observatoire national sur les effets du réchauffement climatique* (ONERC) and the Regional Council of Reunion in the framework of the French Presidency of the European Union, with the objective of proposing a European programme of action.

[www.reunion2008.eu](http://www.reunion2008.eu), [www.iucn.org/euoverseas](http://www.iucn.org/euoverseas)







Dry Forest in New Caledonia © Hubert Géraux

# Changing scale to ensure the future of the New Caledonia dry forests

By **Hubert Géraux**, New Caledonia ecoregional coordinator, WWF-France

New Caledonia's main island is an original piece of Gondwana, the ancient super-continent, and has been isolated from other landmasses for 70 million years. Thanks to this remoteness, animals and plants have evolved into extraordinary biodiversity, and the islands of New Caledonia stand out for the impressive number and the ancient character of much of the flora they house. The dry forests that grow there contain a unique assemblage of species, including more than 450 native plants with 260 which are endemic to New Caledonia and about 50 which are located just in dry forests.

Tropical dry forests, such as New Caledonia's, are the most threatened tropical forests worldwide. Intentionally-ignited fires, trampling by cattle, land conversion for agriculture, housing, and the introduction of alien species such as fire ants pose great threats to the dry forests, and, with less than two percent of the original cover remaining today, this part of the islands' diversity is now severely threatened.

## Dry Forest Conservation Programme

Due to its levels of species richness and endemism, and the severity of the threats it faces, WWF declared New Caledonia's dry forest one of the 238 priority ecoregions of the world (Global 200 programme). Set up in 2001, the Dry Forest Conservation Program (DFCP) brings together ten partners and builds on an efficient and adaptive emergency strategy. This strategy is based on three main goals – protect, restore, promote – and major successes to date include: saving plants featured on the IUCN Red List of Threatened Species such as *Pittosporum tianianum*; carrying out active and passive restoration activities in an increasing number of priority patches (currently the programme is working on actively restoring an extra 45 hectares with a yearly production of 20,000 trees, whilst passively restoring another 1000 hectares); putting up

fencing to keep deer and cattle out (such as around 145 hectares of the northern dry forest of Nékoro); installing fire-fighting measures (fire-breaks, water supply arrangements) and ongoing pest control (against fire ants and weeds); and promoting very efficient awareness campaigns aimed at the local population.

Working beyond the forest's borders, the DFCP is now going from site-specific conservation efforts to a broader landscape scale, to integrate short-term conservation objectives into a longer-term conservation strategy based on **ecological connectivity** and the **outsourcing of conservation efforts**.

## Ensuring ecological viability

Ecological connectivity between the different forest ecosystems (mangroves, dry, mesophytic and moist forests) ensures the ecological viability of the thinnest dry forest patches. Connecting forest patches helps restore their biological capacity and is essential for most of the remaining patches which are smaller than ten hectares. It also maximizes their resilience to climate change by offering dry forest species the opportunity to move towards higher altitudes where rainfall will continue meeting their needs.

Outsourcing conservation efforts means reaching out to the users of the entire landscape matrix, such as NGOs, land managers and private landowners. This is an efficient and crucial way to seize new opportunities and ensure benefits for dry forests in the long run.

Although the challenge is great, the future of New Caledonia's dry forests in the 21st century will undoubtedly depend on the level of ecological interaction between all the forest components, natural or anthropogenic, located on the Western Coast.

More information: [www.foretseche.nc](http://www.foretseche.nc)

# Moorea Ecostation: A model ecosystem for conservation science

By *Neil Davies*, Executive Director of the University of California Berkeley's Richard B. Gump South Pacific Research Station in Moorea

Advanced ecological research can no longer be done anywhere with just a notebook, a pair of binoculars and a butterfly net. Ecology is becoming much more multidisciplinary: The laboratories of 21st century global change science combine the efforts of ecologists, engineers, computer scientists, molecular biologists, archeologists and others. Model ecosystems concentrate this research around a limited number of field sites.

One such field site is on Moorea, embedded in the natural laboratory of French Polynesia. The “Moorea Ecostation” unites the *Centre de Recherches Insulaires et Observatoire de l'Environnement* (CRIOBE; EPHE-CNRS) and the Richard B. Gump South Pacific Research Station (UC Berkeley) in collaboration with French Polynesia. Its overarching goal is to accelerate ecological discovery through the model ecosystem approach and hence to stimulate more rapid innovation in conservation and sustainable development.

The foundation of the research is a detailed description of the ecosystem's biodiversity. This is a formidable challenge in itself, especially in the tropics, and model ecosystems must go far beyond a mere list of species. They will need to characterize all levels of biodiversity from gene to habitat, basically creating a “whole genome sequence” of the ecosystem. With funding from the Gordon and Betty Moore Foundation, an international consortium is genetically barcoding every non-microbial species in the “Moorea Biocode Project” (MBP). Sampling from the coral reef to the mountain tops, they will produce a verifiable “All Taxa Biotic Inventory” (ATBI) of the entire ecosystem, together with the informatics services needed and biocode-enabled research in other model ecosystems.

## Inventory of the entire ecosystem

Work began in 2006 with a pilot project. A team lead by Serge Planes (CRIOBE) has already identified and sequenced most of Moorea's fish (457 species inventoried to date), while Gustav Paulay (University of Florida) and colleagues started on the massive marine invertebrate fauna (>1000 species sampled to date). Planes and Chris Meyer (Smithsonian Institution) are now moving on to using this unprecedented genetic barcode database to conduct a time-series study of marine larvae through regular plankton trawls around Moorea. First, they compare the diversity of the larval samples with the diversity of the adult populations. Secondly, they will examine both spatial and temporal patterns of larval diversity to determine patterns in reef communities and

inform management for improving fish stocks. Thirdly, for 10 key species, they will compare the populations of benthic adults to those of potential recruits. This comparison will identify potential selective filters operating during the settlement phase, and test the assumptions of local vs. regional connectivity.

This knowledge can be turned into practical management solutions. For example, decades of study have shown that many fish populations in Moorea are limited by larval mortality. This knowledge was used by teams based at CRIOBE to pioneer technology for collecting larvae that otherwise would have died, saving them for export to the aquarium trade – thus creating a potentially sustainable industry from one that had previously relied on destructive harvesting techniques.

## Understanding the foodweb

In a biocoded system, scientists will be able to overcome the bias towards certain life stages (e.g., adults) and taxa (charismatic megafauna) in ecological research. This will help them to take a whole systems approach to generate hypotheses of ecosystem structure and function. For example, the starting point in studies of community ecology is the foodweb, which is simply a formal description of the trophic links among organisms in a community, including both numbers of species and the numbers of individuals within species. New analytical tools have made it possible to compare foodwebs in different communities and to test more rigorously hypotheses concerning the determinants and dynamics of community structure. At present what limits the widespread description of foodwebs, however, is accurate and complete documentation of trophic acts – for example, which species of insects and how many of each does a particular lizard species eat in a day? Observations of this type generated for an entire community represent a staggering task but will become possible for Moorea, and nearby islands with a similar biotic make-up, once the MBP is complete in 2010.

The goal of biocode projects in Moorea and other model ecosystems is to provide essential tools for understanding ecological processes in the context of local and global change. Europe's overseas territories (many of them islands, distributed across all oceans from tropical to polar zones) provide powerful ecological research platforms, and potentially represent a global network of model ecosystems.

[moorea.berkeley.edu](http://moorea.berkeley.edu)

Moorea © IUCN / Jérôme Petit



# Managing invasive alien species (IAS) on Islands

By Dr Sugoto Roy, Central Science Laboratory (United Kingdom)

Although islands only occupy a fraction of the Earth's surface, conserving them is the most effective way of conserving a large component of global biodiversity. Many are home to unique species or are important breeding and migration sites for a large number of birds. Some, simply due to their remoteness, are refuges for species once widespread across continents. Island biotas account for approximately 45% of all bird, plant and reptile species. Europe has over 6000 islands, spanning from Arctic to sub-tropical regions. If we include its overseas territories with their high levels of endemism, conserving Europe's islands becomes even more critical.

One of the most important threats that islands face is from introduced species that become invasive. Often, having evolved on continents with numerous predators and competitors, through competition, disease spread or predation, they cause dramatic population declines in native species that have usually evolved with fewer natural enemies. Also, as many island species fulfil multiple roles, for example as pollinators and seed dispersers, their demise can lead to the collapse of entire native ecosystems. Globally, introduced generalist mammals, such as the small Indian Mongoose, black and brown rat, feral cat, feral pig, feral goat and the European rabbit account for a large proportion of the extinction of island species, since marine travel to far flung oceanic islands began in earnest in the 1600s. The American mink was relatively recently added to this list as a result of the fur trade, and is currently having huge impacts throughout Europe.

## Proceed with precaution

In an ideal world, following the precautionary principle is the best way of managing invasive species, preventing their entry to islands, or failing that, containing them quickly before they spread and become established. However, for many islands, removing invasive species that have already become established is the only, albeit costly, solution to conserving them. This course of action has many problems associated with it however: islands are often large and topologically challenging, making it difficult to disperse control agents such as traps or poisons over them; and they are remote, making it difficult to procure equipment or hire local staff within a finite budget. Also, many islands, especially those sustaining marginal communities, are political microcosms, sometimes with their own regional governments and landowners.

In order to deal with some of these challenges, invasive species removal projects need to be planned well in advance, using techniques adapted to local circumstances. They need to be well equipped, with well trained staff. Local people and landowners need to be kept informed of project aims, and any results as they emerge.

## Adapt your strategies

In order to make the best use of time and money, informed decisions must be made robustly, initially by making use of any information that is available in the literature during the planning stages, and making use of the data that is gathered from the project itself, as it progresses, adapting techniques and strategies to the local environment. The latter is often known as adaptive management, or "learning by doing", making use of information as it becomes available, and modifying strategies, decisions and techniques continuously. This type of information is often the only source of available information, particularly where we are dealing with an introduced species in a new environment. The types of data we need are also often sadly lacking in the literature. Information on animals removed/unit effort, or poison bait uptake rates often go unreported, even though they are crucial to invasive species managers. Associating research projects specifically designed to meet the data needs of an adaptive management programme is one solution.

Some groundbreaking invasive species projects are being carried out around the world on islands of increasing size. The areas from which goats, rabbits, rats, cats and mink are being removed, for example, are becoming larger. However, to date, eradications have been limited to a small number of widespread species.

Paradoxically, remote islands are no longer as remote as they once were. Transport through tourism and commerce has led to an increase in the number of invasive alien species spreading to island ecosystems and archipelagos. With the growth of resident and transient human populations, together with associated traffic, this threat will increase and needs to be managed sustainably, and at a regional level. Entire archipelagos will have to be managed together in order to prevent further movements of species, at a more strategic level. Future eradications need to target larger areas, and novel species, both of which will present new challenges to managers.



Islands have a lot of traffic between them, they are simply not isolated enough from a conservation point of view © Sugoto Roy



The Hebridean mink project stall, set up with games and competitions, and project information on the Outer Hebrides © Sugoto Roy



Radio-collaring a mink on the Hebrides in order to find out how the remaining proportion of a population behave as mink control is being carried out © Sugoto Roy

IUCN World Conservation Congress  
5-14 October 2008



IUCN  
World  
Conservation  
Congress  
Barcelona 2008



Tall ships and smaller boats will sail together to Barcelona  
© Fbz\_ via flickr

# Sailing to Barcelona for marine, coastal and island conservation

By Sarah Gindre, IUCN

Although the protection of our marine environment has for a long time lagged behind that of our terrestrial ones, it is no longer new on the global agenda. International marine conservation targets have been adopted by governments, and local initiatives for the protection of marine, coastal and island biodiversity are numerous around the world. However, it is clear that the sum is greater than the parts. During the IUCN World Conservation Congress (WCC) (5–14 October 2008, Barcelona, Spain), IUCN's *Sailing to Barcelona* initiative will give a voice to creative marine conservation efforts from various corners of the world, while helping to build new and innovative partnerships for future action, and raise awareness beyond the conservation community.

The need to protect our coastal, marine and island environments is growing exponentially in the face of the effects of climate change, the overexploitation of fish stocks, and rampant coastal development. Numerous state parties around the world have adopted targets to protect marine biodiversity: the 2010 targets to halt the decline of biodiversity, and to use the ecosystem approach in marine management; the 2012 target to establish representative networks of marine protected areas (MPAs); and the 2015 target to restore depleted fish stocks to maximum sustainable yields. At the European level, concerted efforts are underway to develop an integrated European Marine Strategy. In addition, NGOs are contributing to the protection of coastal, marine and island biodiversity through international, national and local grassroots initiatives.

However, these initiatives need to be better integrated if they are to have lasting positive effects on the conservation of our seas, islands and coasts. IUCN, as the world's oldest and largest

conservation network, is aware of the value that lies in creating linkages between local and global conservation efforts, while forging new partnerships amongst its members and partners. In October 2008, marine issues will play a prominent role within the WCC, with issues such as governance of the high seas, MPAs, climate change and island biodiversity, and fisheries receiving particular attention.

In support of these efforts, IUCN's *Sailing to Barcelona* initiative will offer a neutral platform for IUCN Members and partners to advance the protection of coastal, marine and island biodiversity, while raising awareness amongst the wider public. The essence of *Sailing to Barcelona* lies in its action-oriented nature, with participants showcasing their contributions to the protection of marine and coastal biodiversity. Sailing boats, research vessels and environmentally friendly ships will be the powerful tools used to communicate this action visually. *Sailing to Barcelona* is an initiative in partnership with Countdown 2010 for Marine Ecosystems, and the Antinea Foundation – an international foundation dedicated to raising awareness on, and building partnerships for, marine stewardship.

IUCN invites governments, organizations, companies and sailors passionate about our oceans, seas and coasts to take part in this unique initiative. IUCN welcomes all support to make this an action-oriented and forward-thinking event. Please join us on-board this adventure, help us hoist the sails of passion and dedication, and together sail towards a "bluer" future!

Further information: [www.iucn.org/congress/sailing](http://www.iucn.org/congress/sailing)

# Let's make nature sexy!

**Interview with Ignace Schops, head of the IUCN member organization Regionaal Landschap Kempen en Maasland and European winner of the Goldman Environmental Prize 2008 by Wiebke Herding**

## *What is your advice for successful nature conservation projects?*

Don't take yourself too seriously. You have to have some fun. The idea for the National Park Hoge Kempen was actually born in a pub: We saw that open spaces were disappearing in Flanders, and we decided to do something about biodiversity. We were all conservationists, and we wanted to make nature appealing, even sexy.

## *How is Hoge Kempen special?*

The National Park is in the province of Limburg, the eastern part of Belgium, and the greenest part as well. When we started, the Netherlands had some fifteen National Parks – Belgium had none. Hoge Kempen was an excellent location to become the first one. When we first presented this to the public, everybody loved the idea, but nobody had the money. Luckily that changed later.

We think outside the box because we look beyond the nature reserve into the community around it and connect the two. We've managed to convince our politicians that nature conservation is an asset for economic development of the region. That wasn't always easy. One part of the project was to build an ecoduct across a motorway. The evening before we announced this, the mayor of the municipality wanted to do a publicity stunt dressed as a rabbit, showing how we build bridges for rabbits, but not for people. In the end we convinced him not to do the stunt, and nowadays he is one of our biggest supporters.

## *How much money does one need for such a park?*

When we started, Hoge Kempen was a nature reserve, owned by the Flemish Government, but not too well connected. This reserve was an excellent foundation for our work. Of course, you need some money to set up the organization. More important for us were the connections with the surrounding communities and businesses. Building these relationships needs resources.

"Investing in nature has brought jobs to the region.

- Ignace Schops, Winner of the Goldman Environmental Prize 2008"

Together with the communities we decided to set up five local gateways, which give information about the park and access to it. Each of them is different, and you can easily spend half a day there. They have replaced lots of parking places around the national park. We've invested over 18 million Euros in building and upgrading these five local gateways.

## *What are tourists looking for when they come to a national park?*

We thought that everybody would want to learn about nature, but we found that only a third wanted specific explanations about biodiversity. The rest just came to enjoy themselves. We are currently evaluating our ranger system to take this into account. We want to create a place where people can enjoy the beauty of nature.

## *Has the National Park changed the communities around it?*

I hope that we are moving from "Not in my backyard" to "Please in my backyard!" The Goldman Prize has attracted a lot of attention. People are becoming aware of how beautiful Limburg is. The governor of Limburg recently said on television that "Limburg is now on the global map thanks to nature conservation". He also confirmed that nature hasn't cost any jobs, but in fact has brought jobs to the province. Then he declared that he wanted Limburg to be the first province that is carbon neutral by 2020.

## *The National Park in Hoge Kempen is still relatively new. Where do you see the challenge for the park in the future?*

Showing how biodiversity improves through the existence of the park. We did a species inventory two years ago, and will repeat it every decade. The results in 2016 should show that it's possible to create a space where people enjoy nature, and where a thriving biodiversity develops at the same time. In the end, we've used a very simple model in Hoge Kempen. It takes a lot of work, but I think it can be used not only in Belgium, but also abroad.

## *What does the prize change?*

It's still very new, but I hope that it will create more awareness for what we do. If I say something about biodiversity, the press and politicians have started to listen. I believe that more and more people will understand that climate change and biodiversity loss are two sides of the same coin. The International Year of Biodiversity is one step in this direction, and I hope Europe will take biodiversity as seriously as climate change.





Rapeseed and soybean oils are commonly used in the production of biofuels © Christian Guthier



GEM-CON-BIO analyzed the governance of the biosphere reserve Schorfheide-Chorin, Germany © Thomas Mues

### IUCN voices concerns on biofuels

In a letter to EU Commissioner Andris Piebalgs, IUCN has raised concerns that the mandatory targets for biofuels have been proposed ahead of the necessary scientific developments. New evidence published in the journal *Science* highlights the potentially damaging effects on the environment of promoting biofuel use.

“Such a policy risks promoting the rapid and unsustainable development of a global biofuel industry, thereby compromising effective climate change mitigation, while increasing the risk of significant biodiversity loss and threatening the livelihoods of local communities”, writes Tamás Marghescu, Regional Director for Europe. These effects would be inconsistent with the Commission’s international commitments including the Kyoto Protocol, the UN Convention on Biological Diversity and the Millennium Development Goals.

More information: [www.iucn.org/europe](http://www.iucn.org/europe)

### Systems that save biodiversity

Regulations cannot guarantee conservation of biodiversity, reveals the EU-funded research project GEM-CON-BIO. The most successful governance patterns for biodiversity conservation are based on a mix of financial incentives, regulations and voluntary engagement, according to thirty case studies analyzed in the project.

These patterns could, for example, encourage Europeans to use biodiversity in a sustainable way (through hunting, angling, plant gathering, etc.). Already today, tens of millions of Europeans take part in such activities, spending more than 40 billion Euros annually – and supporting the conservation of ecosystems as a side-effect. In general, this use of natural resources is not harmful for biodiversity, as shown by one pan-European case study.

GEM-CON-BIO (Governance and Ecosystems Management for the Conservation of Biodiversity) compared governance structures in biodiversity contexts as diverse as:

- Europe (such as in Biosphere reserves in Germany and in the Danube Delta, public and private forests and wetlands across Europe, the North Sea Fisheries, etc.);
- USA (such as the Habitat Programme of Maine where towns have to develop credible habitat management plans before they receive public funds for other needs); and
- Other parts of the world (such as Mongolia or Ethiopia where traditional institutions and community management seem to regain credibility as effective biodiversity management and conservation practices).

Download the project report: [www.gemconbio.eu](http://www.gemconbio.eu)

### New IUCN Members

A total of 29 new members were admitted by the IUCN Council at its 69th meeting on 12 March. Ten of these are based in pan-Europe, which brings the total count of members in our region to 369.

In addition to a government agency (the Regional Department for Environment of the Balearic Islands Government, Spain) and a international NGO (LEAD International, based in the UK), eight national NGOs became pan-European IUCN members. The NGOs from West Europe that joined are the National Botanical Conservatory of Brest (France), the Italian Association of Directors and Civil Employees of Protected Areas, the Geological Society of Spain, Borneo Tropical Rainforest Foundation (Switzerland)

and Wildscreen (UK). The NGOs from East Europe, North and Central Asia are the Azerbaijan Ornithological Society, Green Way Foundation (Kazakhstan) and the Green Network of Vojvodina (Serbia).

### New arrivals at IUCN

Ms **Jennifer Palumbo** is Outreach Officer for Countdown 2010 as of March 2008. After graduating in chemistry from the University of Bologna, she obtained a Masters in science communication and she has been active in this domain ever since. Her main focus of interest in the past few years has been public engagement in contemporary science issues. Contact details: [jennifer.palumbo@countdown2010.net](mailto:jennifer.palumbo@countdown2010.net), T +32 2 739 0318.



Ramaz Gokhelashvili at the award ceremony © University of Idaho



White Storks in Tabatskuri, Georgia © IUCN

### Achievement Award for IUCN Director

On April 19, Ramaz Gokhelashvili, Director of the IUCN Programme Office for the Southern Caucasus, received the Alumni Achievement Award for 2008 of the College of Natural Resources of the University of Idaho, for his career record since his graduation in 2000.

Ramaz is a biodiversity conservation specialist and wildlife ecologist, as well as a natural resources and environmental manager, with 18 years of experience in these fields. He has initiated and managed numerous nature conservation projects, assessments and studies in Georgia and elsewhere in the Caucasus. Ramaz also has experience in the fields of biodiversity policy development, regional and international environmental cooperation, and NGO sector development and networking. He is author of six books, more than 30 peer-reviewed scientific papers and more than 70 articles on the subject of natural resource management.

### Wings over Wetlands

The IUCN Programme Office for the Southern Caucasus has joined a partnership of organizations and governments – lead by Wetlands International and BirdLife International and supported by UNEP-GEF – to develop and implement a training and awareness-raising programme on migratory waterbird conservation along the African-Eurasian Flyway.

The project area comprises all 119 range states of the African Eurasian Waterbird Agreement (AEWA), which covers Africa, Europe, south-west Asia, Greenland and the Canadian Archipelago. It aims to support migratory waterbird conservation on the scale of the entire flyway, by coordinating and focusing national efforts, and by exchanging best practice. The training and awareness-raising component will enhance the professional capacity and understanding of flyway-scale conservation concepts among conservation professionals and decision makers at various levels across the AEWA region.

Tobias Garstecki, IUCN Programme Coordinator for the Southern Caucasus, stressed the importance of international coordination of migratory bird conservation: "Migrating birds know no national borders. The best efforts to protect a waterbird species in one country will be worthless if the same species suffers high losses while migrating through another country. By contributing to the training and awareness-raising programme, we will enable managers and decision makers along the whole flyway to take into account these linkages in their day-to-day work".

More information: [www.iucn.org/caucasus](http://www.iucn.org/caucasus)

Ms **Ekaterine Kakabadze** works at the IUCN Programme Office for Southern Caucasus as a consultant in the field of protected areas and protected area networks. She holds a Master's degree in Environmental Sciences from Wageningen University, the Netherlands, and a Diploma from I. Javakishvili Tbilisi State University, Georgia. As part of her studies she worked as an intern at Utrecht University, The Netherlands within the project Europeanization of Nature Protection. Previously, she worked as a public outreach specialist within the EIA/SEA Strengthening Program at CENN – Caucasus Environmental NGO Network, Georgia.

Ms **Andrea Strauss** is the new Assistant to Green Belt Coordinator at IUCN South-Eastern Europe. Andrea holds a MSc in Landscape Ecology and Nature Conservation. She has work experience in Caucasus, Central Asia and Central Europe in the fields of international nature conservation and protected area management. She is based in the Sarrod office in Hungary, and will work mainly on Green Belt projects, meetings, publications, and cooperation with partners. After a first short-term position with the Green Belt in 2005, Andrea spent the last two years working in protected area management and development cooperation in Mongolia. Contact details: [andrea.strauss@iucn.org](mailto:andrea.strauss@iucn.org), T +36 995 37 632

## Forthcoming events

### July

**7 - 11 Reunion Island, France**  
The European Union and its Overseas Entities: Strategies to Counter Climate Change and Biodiversity Loss  
[www.reunion2008.eu](http://www.reunion2008.eu)

### October

**5 - 14 Barcelona, Spain**  
IUCN World Conservation Congress  
"A diverse and sustainable world"  
[www.iucn.org/congress](http://www.iucn.org/congress)



**IUCN**  
**World**  
**Conservation**  
**Congress**  
**Barcelona 2008**

### IUCN's vision

A just world that values and conserves nature.

### IUCN's mission

To influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

### IUCN's mission in the Pan-European region

To foster and fortify a European network of excellence in environmental research, policy and best practice, with the aim to:

1. Contribute to IUCN's global mission
2. Support the integration of biodiversity conservation into economic development
3. Support innovative initiatives for the multifunctional, sustainable use of natural resources

### IUCN in the Pan-European region

The Regional Office for Europe is IUCN's Permanent Representation in Brussels. Through Programme Offices in Belgrade, Moscow, Tbilisi and Tilburg, and in cooperation with European members and other parts of the IUCN constituency, IUCN implements its European Programme. The Programme area covers 53 countries and stretches from Greenland to Kamchatka.

The goal of IUCN's European Programme 2005–2008 is to contribute to halting the loss of biodiversity by 2010 – a political commitment made by European Heads of State and Environment Ministers.

Together as IUCN in Europe, we strive to meet our goals for a sustainable Europe by utilising local expertise and the strength of the global IUCN network.

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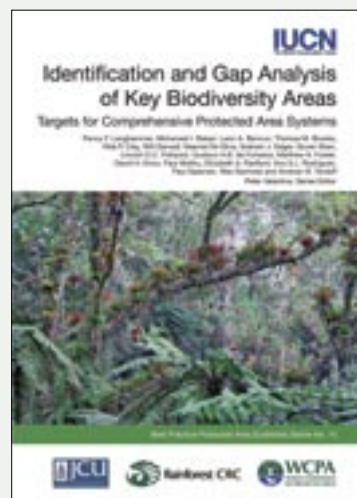
*Ministero dell' Ambiente  
e della Tutela del Territorio*

*Direzione Generale per la Protezione della Natura*

## New Publications

### *Identification and Gap Analysis of Key Biodiversity Areas: Targets for Comprehensive Protected Area Systems.*

Best Practice Protected Area Guidelines Series No. 15



For publications visit [www.iucn.org/publications](http://www.iucn.org/publications)

### *Island voices – Island choices. Developing strategies for living with rapid ecosystem change in small islands.*

Ecosystem Management Series No. 6



## Next issue

The next issue of the Pan-European Newsletter, to be published in September 2008, will explore "a diverse and sustainable Europe".

Submissions and article suggestions are welcome; please send them before 03 August 2008 to [eu.comms@iucn.org](mailto:eu.comms@iucn.org).

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